

## »Performance Specification

Model	I-hold	I-trip	Vmax	Imax	Pd typ	Max. Time to trip		R0 min	R1max
						Current	Time		
	(A)	(A)	(Vdc)	(A)	(W)	(A)	(Sec.)	(Ohm)	(Ohm)
SMD0603-005/48N	0.05	0.15	48.00	40.00	0.50	0.20	1.00	3.50	40.00

I-hold: Holding Current: maximum current at which the device will not trip in 25°C still air.

I-trip: Tripping Current: minimum current at which the device will trip in 25°C still air.

Vmax: Maximum voltage device can withstand without damage at rated current(Imax).

Imax: Maximum fault current device can withstand without damage at rated voltage(Vmax).

Pd typ: Typical power dissipated from device when in the tripped state at 25°C still air.

R0 min: Minimum resistance of device in initial (un-soldered) state.

R1 max: Maximum resistance of device at 25°C measured one hour after tripping or reflow soldering of 260°C for 20 sec.

## »Thermal Derating Chart Recommended Hold Current(A) at Ambient Temperature(°C)

Model	Ambient Operating Temperature								
	-40°C	-20°C	0°C	25°C	40°C	50°C	60°C	70°C	85°C
SMD0603-005/48N	0.065	0.060	0.055	0.050	0.040	0.035	0.030	0.025	0.015

## »Environmental Specifications

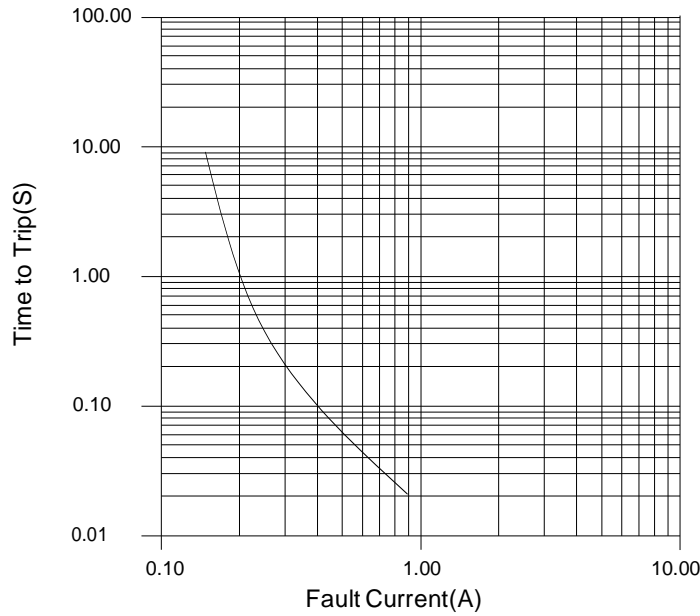
Operating Temperature	-40 °C to +85 °C
Maximum Device Surface Temperature in Tripped State	125°C
Passive Aging	+85 °C, 1000 hours ; ±5 % typical resistance change
Humidity Aging	+85 °C, 85 % R.H. 1000 hours; ±5 % typical resistance change
Thermal Shock	MIL-STD-202, Method 107; +85 °C to -40 °C, 20 times; -30 % typical resistance change
Solvent Resistance	MIL-STD-202, Method 215 ; No change
Vibration	MIL-STD-883, Method 2007, Condition A; No change
Moisture Sensivity Level	Level 1, J-STD-020
Storage Conditions	+40 °C Max. 70% RH Max. Packed in original packaging.

## »Test Procedures And Requirements

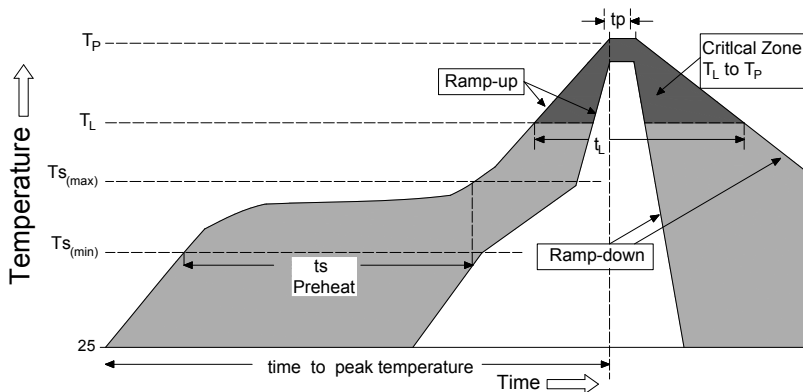
No.	Test	Test Conditions	Accept/Reject Criteria
1	R0 min	Resistance measurement at 25°C	$R0min \leq R \leq R1max$
2	R1 max	Resistance measurement one hour after post trip	$R0min \leq R \leq R1max$
3	I-hold	Hold rated current 1800 second without trip, @ 25°C	No trip
4	I-trip	Device must trip within 900 second under rated current, @25°C	Trip
5	Max. time to trip	At specified current, 25°C	$T \leq \text{max. time to trip (seconds)}$
6	Trip Cycle Life	Vmax, Imax, 100 cycles	No arcing or burning
7	Trip Endurance	Vmax, Imax 24 hours	No arcing or burning
8	Solderability	ANSI/J-STD-002	95 % min. coverage

»Typical time to trip at 25°C

SMD0603-005/48N Fault current chart



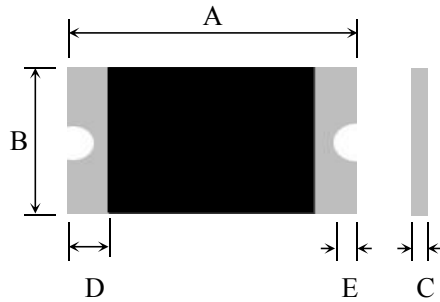
»Soldering Parameters



Profile Feature		Pb-Free Assembly
Average Ramp-Up Rate (Ts(max) to Tp)		3°C/second max
Pre Heat:	Temperature Min (Ts(min))	150°C
	Temperature Max (Ts(max))	200°C
	Time (Min to Max) (ts)	60 – 180 secs
Time Maintained Above:	Temperature (Tl)	217°C
	Temperature (tl)	60 – 150 seconds
Peak / Classification Temperature (Tp)		260 <sup>+0/-5</sup> °C
Time within 5°C of actual peak Temperature (tp)		20 – 40 seconds
Ramp-down Rate		6°C/second max
Time 25°C to peak Temperature (Tp)		8 minutes Max.

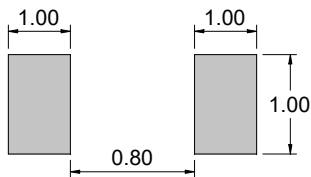
- ◆ All temperature refer to topside of the package, measured on the package body surface
- ◆ If reflow temperature exceeds the recommended profile, devices may not meet the performance requirements
- ◆ Recommended reflow methods: IR, vapor phase oven, hot air oven, N2 environment for lead
- ◆ Recommended maximum paste thickness is 0.25mm (0.010inch)
- ◆ Devices can be cleaned using standard industry methods and solvents

»Physical Dimensions(mm)



Model	A		B		C		D		E
	Min	Max	Min	Max	Min	Max	Min	Max	Min
SMD0603-005/48N	1.45	1.85	0.65	1.05	0.40	0.80	0.15	0.50	0.05

»Recommended Pad Layout (mm)&Physical Specifications



Terminal Material	Tin-Plated Nickle-Copper (Solder Material: Matte Tin (Sn))
Lead Solderability	Meets EIA Specification RS186-9E, ANSI/J-STD-002 Category 3.

»Tape And Reel Specifications (mm)&Packaging quantity

TAPE SPECIFICATIONS: EIA-481-1 (mm)	
W	8.00±0.30
F	3.50±0.10
E1	1.75±0.10
D0	1.55±0.05
D1	0.50±0.10
P0	4.00±0.10
P1	4.00±0.10
P2	2.00±0.05
A0	1.10±0.10
B0	1.85±0.10
T	0.20±0.10
K0	0.72±0.10
Leader	390mm
Trailer	160mm
Q'ty	5,000pcs/Reel

REEL DIMENSIONS: EIA-481-1 (mm)	
C	Ø178±1.0
D	Ø60.2±0.5
W	9.0±1.5
H	11.0±0.5

